



Indiana Department of Environmental Management
Office of Land Quality
Indianapolis, IN 46204
OLQ PH: (317) 232-8941

GUIDANCE

Indiana Department of Environmental Management Office of Land Quality

Auto Salvage Yard Contaminants of Concern

This auto salvage yards contaminants of concern (COC) document was written to assist auto shredder owner/operators, auto salvage yard owner/operators, and IDEM staff in the investigation or remediation of soils and groundwater at auto salvage yards. The Contaminants of Concern (COCs) list is to be used in the analysis of soils and groundwater. This document is not intended for waste disposal determinations.

Materials typically found at auto salvage yards are antifreeze, lead batteries, fuels (gas and diesel), motor oils, brake fluids, differential oils, hydraulic fluid, power steering fluid, transmission fluids, brake parts, mercury switches, fluff from shredding vehicles, and refrigerants.

The following table summarizes the contaminants of concern and the analytical methods that should be utilized at each sampling location (for both soil and groundwater). Note: The IDEM reserves the right to modify these requirements dependent upon historical site conditions and the type and nature of the release. The IDEM also recommends using the most updated analytical method.

| Contaminants of Concern | Analytical Method (SW-846 methods unless otherwise noted) |
|---|---|
| Metals* (arsenic, cadmium, chromium, lead, and mercury) | 6010B, 6020, 7000 methods |
| pH (soils) | 9045C |
| VOCs** | 8260B |
| TPH GRO** | 8015B Modified |
| TPH ERO | 8015B Modified |
| Ethanol | 8015B, 8260B (liquids) 8260B with preparation method 5031 or 5032 (solids) |
| Ethylene glycol and propylene glycol | 8015B |
| MTBE and Oxygenates** | 8260B |
| Naphthalene | 8021B, 8260B, 8270C*** |
| PAHs | 8270C SIM, 8310 |
| PCBs | 8082 |
| TPH - total petroleum hydrocarbons GRO - gasoline range organics (C5 to C12) BTEX - benzene, toluene, ethylbenzene, and xylenes MTBE - methyl tertiary-butylether, aka methyl t-butylether PAHs - polyaromatic hydrocarbons ERO - extended range organics (C8 to C36) VOCs - volatile organic compounds PAHs - polyaromatic hydrocarbons PCBs - polychlorinated biphenyls SIM - Selective Ion Monitoring | |

The following table presents the contaminants of concern (COCs) and the analytical requirements (for both soil and groundwater) for each material.

| Material | Contaminants of Concern | Analytical Method (SW-846 methods unless otherwise noted) |
|-----------------------------------|--|---|
| Antifreeze | Ethylene glycol and propylene glycol | 8015B |
| | Metals* | 6010B, 6020, 7000 methods |
| Battery | Lead, Cadmium* | 6010B, 6020, 7000 methods |
| | pH (soils) | 9045C |
| Gasoline | TPH GRO** | 8015B Modified |
| | VOCs** | 8021B, 8260B |
| | Ethanol | 8015B, 8260B (liquids) 8260B with preparation method 5031 or 5032 (solids) |
| | Naphthalene | 8021B, 8260B, 8270C*** |
| | MTBE and Oxygenates** | 8260B |
| | Lead* | 6010B, 6020, 7000 methods |
| | | |
| Diesel fuel | TPH ERO | 8015B Modified |
| | BTEX** | 8021B, 8260B |
| | MTBE** | 8260B |
| | PAHs | 8270C SIM, 8310 |
| | Naphthalene | 8021B, 8260B, 8270C*** |
| Motor oil, used | TPH ERO | 8015B Modified |
| | VOCs* | 8260B |
| | PAHs | 8270C SIM, 8310 |
| | Naphthalene | 8021B, 8260B, 8270C*** |
| | (site specific only – metals and PCBs) | 6010B, 6020, 7000 methods, and 8082 |
| Brake fluids | TPH ERO | 8015B Modified |
| Differential oils | TPH ERO | 8015B Modified |
| Hydraulic fluids | TPH ERO | 8015B Modified |
| | (site specific only – PCBs) | 8082 |
| Power steering fluid | TPH ERO | 8015B Modified |
| Transmission fluids | TPH ERO | 8015B Modified |
| Mercury switches | Mercury* | 6010B, 6020, 7470A, 7471A |
| Brake parts | Asbestos | Site Specific |
| Fluff from shredding vehicles**** | Metals* | 6010B, 6020, 7000 methods |
| | PCBs | 8082 |
| Refrigerants | VOCs** | 8260B |

*When metals and ionizable compounds are contaminants of concern, soil pH should be taken to verify that RISC default closure levels are applicable. Ionizable compounds include 2-chlorophenol and 2,4-dichlorophenol. Soil pH is particularly of concern at facilities that manage automotive batteries.

**Soil samples to be analyzed for low level volatile compounds should be sampled using sampling method SW-846 5035A. In areas of known or suspected VOC contamination, traditional sampling methods may be used.

***Recommended method. The use of a purge and trap procedure may result in biased low analytical results.

****Fluff from shredding vehicles may contain any of the contaminants of concern and should be analyzed for all the contaminants of concern.

Fuel oxygenates are primarily ethers and alcohols specifically added to gasoline to increase the octane content, promote cleaner burning in gasoline engines, and/or improve other performance characteristics. The most common fuel oxygenates are methyl tertiary-butyl ether (MTBE) and ethanol. Other fuel oxygenates include: tertiary-amyl methyl ether (TAME), ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), tertiary-amyl ethyl ether (TAEE), tertiary-butyl alcohol (TBA), tertiary-amyl alcohol (TAA), and methanol.

The analysis of soils or groundwater for asbestos should be considered on a site specific basis. If asbestos is a concern in these media, please contact OLQ Chemistry for further guidance.

References:

The IDEM's Risk Integrated System of Closure (RISC) Technical Resource Guidance Document, Chapter 8 - Total Petroleum Hydrocarbons

The IDEM's Risk Integrated System of Closure (RISC) Technical Resource Guidance Document, Appendix Two.

The IDEM's Risk Integrated System of Closure (RISC) User's Guide, Chapter 3 - Leaking Underground Storage Tank Program

The IDEM's Cleanup of Contaminated Areas

http://www.in.gov/idem/programs/land/autosalvage/documents/pres_cln_cont_areas/files/v3_document.html

Analytical Methodologies for Fuel Oxygenates, 2003, EPA 510-F-023-001

<http://www.epa.gov/oust/mtbe/omethods.pdf>

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

<http://www.epa.gov/epaoswer/hazwaste/test/main.htm>